

Amendments to the Claims:

Please cancel Claims 5, 6, 11 and 12, without prejudice or disclaimer of subject matter thereof, add new Claims 16 to 23, and amend Claims 1 and 7 to 10, as shown below. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A steerable mirror assembly comprising:

a mounting plate;

a mirror with a mounting surface and a reflective surface;

~~at least one flexible connector~~ three C-shaped or U-shaped flexible connectors coupled between the mounting plate and ~~a peripheral portion~~ peripheral portions of the mirror, ~~said flexible connectors flexibly constraining the mirror wherein the at least one flexible connector is adapted to allow the mirror to move within a predetermined range along an axis perpendicular to the surface of the mirror and adapted to allow tilting around axes parallel to a plane of the mirror;~~

~~at least one moveable support member~~ three support members coupled between the mounting plate and the mounting surface, wherein said support members provide ~~surface of the mirror wherein the at least one moveable support member provides~~ mechanical support to the mirror and ~~is adapted to~~ simultaneously move the mirror in one translational degree of freedom within a predetermined range along an axis perpendicular to the reflective surface of the mirror and ~~adapted~~ in two rotational degrees of freedom to allow tilting around axes parallel to a plane of the reflective surface ~~mirror~~; and

at least one position sensor.

2. (Original) The steerable mirror assembly of claim 1 further comprising a mirror support structure, wherein the mirror is mounted on the mirror support structure.

3. (Original) The steerable mirror assembly of claim 1 further comprising at least one reaction mass mounted below a second surface of the mounting plate.

4. (Original) The steerable mirror assembly of claim 3 wherein the at least one reaction mass comprises:

at least one flexure, and

at least one position sensor.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The steerable mirror assembly ~~of claim 5~~ according to Claim 1, wherein said flexible connectors are comprised of metal or plastic ~~the C-flexure is selected from the group of metal and plastic.~~

8. (Currently Amended) The steerable mirror assembly ~~of claim 6~~ according to Claim 1, wherein said flexible connectors are comprised of composite multi-layer metal structures ~~the U-flexure is a composite multi-layer metal structure.~~

9. (Currently Amended) The steerable mirror assembly according to Claim 1, wherein said mirror forms of claim 1 ~~wherein the mirror has a central aperture.~~

10. (Currently Amended) The steerable mirror assembly of claim 1 wherein said flexible connectors provide ~~the at least one flexure comprises three flexures providing control over three degree degrees of freedom.~~

11. (Cancelled)

12. (Cancelled).

13. (Withdrawn) A method of operating a steerable mirror comprising:

measuring position data from at least one position sensor;

transforming the position data from a sensor coordinate space to a Cartesian coordinate space to create control data;

generating tilt and piston commands;

calculating tilt and piston control laws using the tilt and piston commands and the control data;

transforming the control laws from a Cartesian coordinate space to an actuator space to create actuator data; and

generating signals to actuate moveable members.

14. (Withdrawn) The method of claim 13 further comprising:

performing calculations to modify the position data after the step of measuring position data; and

performing calculations to modify the actuator data after the step of transforming the control laws from a Cartesian coordinate space to an actuator space.

15. (Withdrawn) The method of claim 13 wherein the step of generating signals comprises generating a plurality of simultaneous signals.

16. (New) The steerable mirror assembly according to Claim 1, wherein said mounting plate is comprised of aluminum, steel, silicon carbide, beryllium, a graphite-epoxy composite, or a metal matrix composite.

17. (New) The steerable mirror assembly according to Claim 1, wherein each of said flexible connectors is 2 centimeters tall.

18. (New) The steerable mirror assembly according to Claim 1, wherein said flexible connectors are comprised of steel, titanium copper, beryllium-copper, or ELGILOY[®] alloy.

19. (New) The steerable mirror assembly according to Claim 1, wherein the reflective surface is annular shaped.

20. (New) The steerable mirror assembly according to Claim 1, wherein said support members are actuators.

21. (New) The steerable mirror assembly according to Claim 20, wherein said support members are voice coil actuators.

22. (New) The steerable mirror assembly according to Claim 20, wherein said support members are Lorenz force actuators.

23. (New) The steerable mirror assembly according to Claim 1, wherein said flexible connectors are spaced at an angular spacing of 120° from each other.